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10/816,045	04/01/2004	Venkat Selvamanickam	1014-SP127	9625

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EXAMINER

TALBOT, BRIAN K

ART UNIT PAPER NUMBER

1762

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/816,045

Applicant(s)

SELVAMANICKAM ET AL.

Examiner

Brian K. Talbot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 34-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/30/04; 1/18/05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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1. Applicant's election with traverse of Group I, claims 1-33, in the reply filed on 2/28/06 is acknowledged. The traversal is on the ground(s) that the groups are not independent and distinct as required by statute and different classification are not adequate group for restriction since the office has examiner multiple group in the past. This is not found persuasive because the issues that arise in prosecution are different and this would constitute a burden.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-38 remain in the application with claims 34-38 being withdrawn as being directed toward a non-elected invention. Hence, claims 34-38 should be canceled in response to this Office Action. Claims 1-33 remain in the application.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8-10,15-20,22-23 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 8, the claim is not further limiting. The dependent claims (7 and 1) require that the substrate is translated continuously (i.e. reel-to-reel) while be subjected to mechanical waves in the fluid (claim 1). Clarification is requested.

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With respect to claims 9 and 10, the term “translated” lacks antecedent basis as the dependent claim recites “immersing” and not “translating”.

With respect to claims 15-20, the annealing step is unclear as to whether or not it is performed prior to or after the coating step as either would constitute “after cleaning”.

Clarification is requested.

With respect to claims 22-23, the annealing step is unclear as to whether or not it is performed prior to or after the coating step as either would constitute “after cleaning”.

Clarification is requested.

With respect to claim 33, the term “first major surface” lacks antecedent basis.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-33 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Ignatiev et al. (2004/0016401).

Ignatiev et al. (2004/0016401) teaches a method and apparatus for forming a superconductor material on a tape substrate. The invention uses a pay-out reel and take-up reel

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to dispense and spool the tape. The process utilizes a reaction chamber for cleaning the substrate, applying buffer layers and applying superconductor layers (abstract). The tape (408) should be cleaned and free of grease and other contaminants. A vapor degreaser or cleaner can be used in the pre-clean stage. Alternatively a mechanical cleaner or ultrasonic bath can be utilized. Initialization stage pre-heats and or pre-treats the tape (408) (col. 3, [0031] – [0033]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over R.

Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401).

R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" teaches a continuous reel to reel deposition of oriented buffer layers and RBCO-superconductor. In a first step, a high temperature steel tape is electropolished and cleaned at a speed of 5-10 m/h to remove defects and to provide a surface finish (rms of less than 1.5 nm). Subsequently a MgO buffer layer is grown at room temperature using ISD and then a superconductor layer of RBCO

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is applied epitaxially. A final sputtering step of applying a gold/silver layer to the superconductor layer is disclosed. The T_c is 77K.

R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" fails to teach the claimed pretreatment of "mechanical waves".

Ignatiev et al. (2004/0016401) teaches cleaning a substrate prior to applying buffer and superconductive layers including an ultrasonic bath.

Therefore it would have been obvious at the time the invention was made to have modified R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" by substituting one well known precleaning treatment (ultrasonic waves) for another (electropolishing) as evidenced by Ignatiev et al. (2004/0016401) with the expectation of achieving similar success.

With respect to claims 2-6,9 and 10 the claims recite sound waves, water medium, frequency of the waves and reel speed. It is the Examiner's position that these features are all "result effective" variables which are optimized through routine experimentation of a practitioner in the art. Absent a showing of unexpected results regarding these features, it is the Examiner's that it would have been obvious for one skilled in the art to have selected the claimed features with the expectation of achieving similar success.

With respect to claims 11-13, the claims recite a polishing step. The art teaches cleaning and polishing as viable pretreatment steps and one skilled in the art would have had a reasonable expectation of achieving an additive effect by utilizing more than one conventional precleaning step to produce a "clean" substrate.

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With respect to claims 22 and 23, the claims recite a plasma pretreatment step. While the Examiner acknowledges the fact that the combination rejection fails to recite a plasma pretreatment step, it is the Examiner's position that plasma cleaning/pretreatment is conventional in the art as a viable alternative to other conventional precleaning or pretreatment steps to produce a "clean" substrate for successful subsequent coating.

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401) or Ignatiev et al. (2004/0016401) alone further in combination with Goyal et al., "Processing of High Temperature Superconductors".

Features described above concerning R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401) or Ignatiev et al. (2004/0016401) alone are incorporated here.

R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401) or Ignatiev et al. (2004/0016401) alone fail to teach a biaxially textured buffer layer of a superconductor layer being applied by IBAD.

Goyal et al., "Processing of High Temperature Superconductors" teaches a biaxially textured buffer layer of a superconductor layer being applied by IBAD deposited on polished steel substrates (abstract).

Therefore it would have been obvious at the time the invention was made for one skilled in the art to have modified R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401) or Ignatiev et al.

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(2004/0016401) alones process by forming a biaxially textured buffer layer of a superconductor layer being applied by IBAD as evidenced by Goyal et al., "Processing of High Temperature Superconductors" with the expectation of achieving similar success.

Claims 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401) or Ignatiev et al. (2004/0016401) alone further in combination with Glowacki et al. (6,251,834).

Features described above concerning R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401) or Ignatiev et al. (2004/0016401) alone are incorporated here.

R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401) or Ignatiev et al. (2004/0016401) alone fail to teach the claimed pretreatment step of annealing.

Glowacki et al. (6,251,834) teaches improved substrate from growing superconducting oxide materials whereby the substrate is pretreated by an annealing procedure (col. 2, line 40 – col. 3, line 30).

Therefore it would have been obvious at the time the invention was made to have modified R. Nenetschek, et al., "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. (2004/0016401) or Ignatiev et al. (2004/0016401) alones process by substituting one well known precleaning treatment (annealing) for another


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(electropolishing/ultrasound waves) as evidenced by Glowacki et al. (6,251,834) with the expectation of achieving similar success.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 4/25/06
Brian K Talbot
Primary Examiner
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BKT